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10/598,647	09/07/2006	Javier del Prado Pavon	USO40143	8490
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EXAMINER				
WANG-HURST, KATHY W				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/598,647

Applicant(s)

DEL PRADO PAVON ET AL.

Examiner

KATHY WANG-HURST

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/7/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date 9/7/2006
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 09/07/2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

2. The disclosure is objected to because of the following informalities:

a) page 2 line 3, "connect devices" should be replaced by "connected devices".

Appropriate correction is required.

b) page 5, line 19 controller 301 and transmitter 302 are labeled differently from Fig. 3A.

Appropriate correction is required.

c) page 5 line 29, controller 352 is labeled differently from Fig. 3B. Appropriate correction is required.

The specification is also objected to because key terms such as DRP, EDCA, micro-scheduling are not defined or explained. Understanding of these key terms is relied upon two references that are incorporated in the specification. These references are not provided to the examiner nor are they publicly available. The references should be provided to the examiner and they are:

a) "MBOA Wireless Medium Access Control (MAC) Specification for High Rate Wireless Personal Area Networks (WPANs), Technical Specification, Draft 0.5, April 2004". This

reference is not provided with the application, nor is it available or published in examiner's search resources.

b) "WUSB Key Developers, USB-IF, WUSB Micro-scheduling specification, Revision 0.5c, December 2003".

Claim Objections

3. Claim 1 is objected to because DNT is not a standard art term to use in a claim without clearly defining it. In addition, the term DNT traffic is redundant "device notification traffic traffic". Appropriate correction is required. Claim 1 is also objected to because distributed UWB MAC protocol is incorporated in the claim but not defined or explained adequately.

Claims 4, 8, 10 and 12 are objected to because terms DRP and EDCA are used in claims but not defined or explained adequately.

Claims 5 and 39 are objected to because the term "beaconing capabilities" are not defined or explained adequately. The term could be interpreted as the host/device has the capabilities to send a beacon or interpreted as host/device sending its capabilities (type of device and type of traffic the host/device is sending) through beaconing.

For examining purposes, "802.15.3 IEEE Standard for Information technology; Part 15.3 Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications of High Rate Wireless Personal Area Networks (WPANs)" is relied upon to interpret claims.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 5, 6, 8, 10, 12, 20, 35, 39, 40, 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Peters et al. (**US 2003/0086388**), herein referred as Peters.

Regarding claim 1, Peters discloses a method for host-device communication in a first WUSB network (**Abstract and Fig. 1B**) including a host (**Fig. 1B, 10**) and at least one connected device (**Fig. 2, 25**), comprising the steps of:

beaconing according to a distributed UWB MAC protocol by the host and the at least one connected device; **[[0054], host beaconing device for connection; and [0036] showing the use of MAC for authentication)**

receiving by the host DNT traffic **[[0054], host receiving the response from the device);**

operating the network by the host according to the capabilities of connected devices **[[0034] network is operated through protocol management interface depending on the type of device/capabilities).**

Regarding claim 4. applicant of this application uses alternative language "one of the steps". Examiner will only meet one of the limitations to read on the claim. Peters

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discloses the method of claim 1, further comprising the at least one connected device performing the steps of:

signaling in the beacons to send notification traffic **([0005])**.

Regarding claim 5. Peters discloses the method of claim 1, wherein said beaconing step further comprises the steps of:

including in a host beacon capabilities of the host **(Abstract)**; and

including in a connected device beacon capabilities of the at least one connected device **(Abstract)** .

Regarding claim 6. Peters discloses the method of claim 1, further comprising the step of the at least one connected device discovering the host via the host beacon **(Abstract)**.

Regarding claim 8, the limitations in this claim are rejected based on the same reasons given to reject claim 4.

Regarding claim 10, the limitations in this claim are rejected based on the same reasons given to reject claim 4.

Regarding claim 12, the limitations in this claim are rejected based on the same reasons given to reject claim 4.

Regarding claim 20, Peters discloses a host apparatus for host-device communication in a first WUSB network including the host and at least one connected device, comprising:

a transmitter **(for a wireless network it is implied that a transmitter must exist to transmit signals)** for sending beacons, traffic notifications, medium reservations and data;

a receiver **(for a wireless network it is implied that a receiver must exist to receive signals)** for receiving beacons, traffic notifications, medium reservations and data;

a host data transfer processing component **(for a wireless network it is implied that a data processing component must exist to process signals)** that processes data transferred between the host and the at least one connected device; and

a controller **(for a wireless network it is implied that a controller must exist to coordinate the functions)** operably coupled to the transmitter, receiver and host data transfer processing component and configured to direct the transmitter, receiver and host data transfer processing component to -

-start beaconing according to a distributed UWB MAC protocol and announce host capabilities **([0054], host beaconing device for connection; and [0036] showing the use of MAC for authentication; Abstract showing host capabilities)**

-receive and process according to a distributed UWB MAC protocol, beacons of the at least one connected device including capabilities of the at least one device **(Abstract**

beaconing, responding and processing; [0036] showing use of MAC; Abstract showing device capabilities),

-receive and process DNT traffic ([0054], host receiving and processing the response from the device), and

-start and control WUSB operation of the network. ([0034] network is operated through particular wireless communication protocol)

Regarding claim 35, the limitations in this claim are rejected based on the same reasons given to reject claim 6.

Regarding claim 39, the limitations in this claim are rejected based on the same reasons given to reject claim 5.

Regarding claim 40, the limitations in this claim are rejected based on the same reasons given to reject claim 6.

Regarding claim 45, the limitations in this claim are rejected based on the same reasons given to reject claim 6.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-3, 7, 9, 11, 13-19, 21-34, 36-38, 41-44 are rejected under 35 U.S.C.

103(a) as being unpatentable over Peters in view of IEEE Std 802.15.3-2003, herein referred to as IEEE.

Regarding claim 2. Peters discloses the method of claim 1, further comprising the step of requesting the status of the port, but fails to disclose the method comprising, if distributed reservation is supported, setting an offset field and a duration field in a DRP reservation. IEEE teaches a method comprising reservation request **(section 8.4.3)** having a start time and a duration that is a multiple of a predetermined value **(section 7.5.6.1, multiple of TUs, time units)**.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the method taught in IEEE into the method disclosed by Peters in order to extend the functionality and scope of the network.

Regarding claim 3. Peters discloses the method of claim 2, but fails to disclose the method wherein the predetermined value is 625usec. IEEE teaches the predetermined value **(section 7.5.6.1, time unit is user specific and can be any value in the range of [0, 655535]usec and 625usec is within this range)**. Therefore, it would have been

obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the method taught by IEEE into the method disclosed by Peters in order to be more specific on the application.

Regarding claim 7, Peters discloses the method of claim 1, wherein the operating step further comprises the step of if the connected device supports EDCA, the host performing the steps of:

accessing the medium (**Fig. 14**);

polling (**Fig. 14**) the at least one connected device to request that the at least one connected device transmit data; and

receiving data from the at least one connected device as a result of the poll. (**Fig. 14**)

However Peter fails to explicitly disclose the method using an EDCA mechanism to access the medium. IEEE (**Section 8.4.3.1 channel time allocation with priority and A1.2.1 QoS support**) teaches a resource reservation control mechanism with different priority to different application or data flows. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the method taught in IEEE into method disclosed by Peters in order to enhance the quality and efficiency of the data transmission process.

Regarding claim 9, Peters discloses the method of broadcast polling messages but fails to disclose the method further comprises the step of if the connected device supports Unicast DRP, performing a Unicast reservation by the host. IEEE teaches a method of

performing unicast reservation (section 8.5) by the host performing the steps of:
initiating a Unicast DRP reservation to the at least one device to reserve channel resources for transmission of data to the host by the at least one device; **(section 8.5 channel reservation which includes 8.5.1 for isochronous streams and 8.5.2.1 for asynchronous streams)**

polling the at least one connected device during DRP to request that the at least one connected device transmit data; **(Section C.2.1 b, polling method is used)** and receiving data from the at least one connected device at a result of the poll **(Section 8.8.2 and 8.8.3 acknowledging receipt of data)**. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the additional features taught in IEEE into the method disclosed by Peters in order to expand the functionalities of the wireless network.

Regarding claim 11, Peters discloses the method of claim 1 but fails to disclose the method, wherein the operating step further comprises *the* step
of if the connected device supports Multicast DRP, performing a Multicast reservation by the host . IEEE **(section 8.5.2)** teaches the method of multicast reservation performing the steps of:

reserving channel resources in a first DRP reservation by inclusion of multicast DRP in beacons to achieve a first reservation **(sections 8.5.2.1 and 8.5.2.2)**;

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for each connected device that is a non-accepting device that does not accept the Multicast DRP reservation, initiating regular DRP negotiation with each non-accepting device to achieve at least one of a Unicast reservation for each non-accepting and a second DRP reservation **(Section 8.4.3.2 channel time allocation, paragraph 4, if not receiving multicast traffic);**

micro-scheduling the channel resources of the first and second DRP reservation among those connected devices of the at least one connected device that accept the multicast DRP reservation **(section 8.4.3 allocating resources);** and

receiving data from the at least one connected device **(section 8.8.2 and 8.8.3 acknowledging receipt of data).**

Regarding claim 13, IEEE discloses the method of claim 12, wherein the initiating regular DRP negotiation step further comprises the step of performing at least one of the steps of initiating a Unicast DRP reservation with a non-accepting device and initiating a second Multicast DRP reservation with non-accepting devices. **(Section 8.5 for unicast and multicast reservations)**

Regarding claim 14, Peters discloses the method of devices attaching and detaching to host in a WUSB network but fails to disclose the method comprising the step of the at least one connected device acting as a host in second WUSB network. IEEE teaches a method whereby the device can form its own subsidiary piconet which in effect makes

the device a "host" (**section 5.2**). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the method taught by IEEE into the method disclosed by Peters to enhance the flexibility and scalability of the network.

Regarding claim 15, Peters discloses the method of claim 14, wherein the host device may be further comprised of host and a wireless module in a WUSB network but fails to disclose at least one connected device acting as a host of the second network performs at least some of the steps performed by the host of the first network. IEEE teaches a method wherein the host device can request the formation of a subsidiary piconet, and a piconet is capable of acting as the PNC (**Section 5.2 and section 5.3.1**). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the method taught in IEEE into the method disclosed by Peters in order to expand the functionality and flexibility of the wireless network.

Regarding claim 16, the limitations in this claim are rejected based on the same reasons given to reject claim 2.

Regarding claim 17, the limitations in this claim are rejected based on the same reasons given to reject claim 3.

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Regarding claim 18, the limitations in this claim are rejected based on the same reasons given to reject claim 2.

Regarding claim 19, the limitations in this claim are rejected based on the same reasons given to reject claim 3.

Regarding claim 21, Peters discloses the host apparatus of claim 20, wherein the controller is further configured to direct the transmitter, receiver and host data transfer processing component but fails to include the technical details of multicast, unicast reservation mechanisms. IEEE teaches the host apparatus wherein the controller is configured to:

include multicast DRP in beacons **(section 8.5.2)** and then start micro-scheduling operation of multicast DRP is supported;

receive and process DNT traffic **([0054], host receiving and processing the response from the device)** and if only unicast DRP **(section 8.5.2)** is supported by the connected device negotiate unicast DRP with the at least one connected device and then start WUSB operation; and

receive and process DNT traffic and if only EDCA is supported by the connected device start WUSB operations with poll frame using EDCA **(Section 8.4.3.1 channel time allocation with priority and A1.2.1 QoS support)**.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the features that taught in IEEE into the apparatus disclosed by Peters in order to expand the capabilities of the wireless network.

Regarding claim 22, Peters discloses the host of apparatus of claim 20, wherein the controller is further configured to direct the device data transfer processing component but fails to disclose to set an offset field and a duration field in each DRP reservation to a multiple of predetermined value. IEEE teaches a reservation request mechanism having a start time and a duration that is a multiple of a predetermined value (**section 7.5.6.1, multiple of TUs, time units**).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the method taught in IEEE into the method disclosed by Peters in order to extend the functionality of reservation of the wireless network.

Regarding claim 23, the limitations in this claim are rejected based on the same reasons given to reject claim 3.

Regarding claim 24, the limitations in this claim are rejected based on the same reasons given to reject claim 7.

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Regarding claim 25, the limitations in this claim are rejected based on the same reasons given to reject claim 9.

Regarding claim 26, the limitations in this claim are rejected based on the same reasons given to reject claim 21.

Regarding claim 27, the limitations in this claim are rejected based on the same reasons given to reject claim 21.

Regarding claim 28, the limitations in this claim are rejected based on the same reasons given to reject claim 1.

Regarding claim 29, the limitations in this claim are rejected based on the same reasons given to reject claim 11.

Regarding claim 30, the limitations in this claim are rejected based on the same reasons given to reject claim 11.

Regarding claim 31, the limitations in this claim are rejected based on the same reasons given to reject claim 2.

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Regarding claim 32, the limitations in this claim are rejected based on the same reasons given to reject claim 3.

Regarding claim 33, the limitations in this claim are rejected based on the same reasons given to reject claim 4.

Regarding claim 34, the limitations in this claim are rejected based on the same reasons given to reject claim 1.

Regarding claim 36, Peters a method for host-device communication in a WUSB network including a host and at least one connected device, comprising the steps of: beaconding according to a distributed UWB MAC protocol by the host and the at least one connected device (**Abstract and [0034]**);

Peter does not disclose establishing unicast reservations. IEEE teaches establishing unicast reservation between the host and the at least one connected device (**section 8.5.2 host and device reservation**); and

running a WUSB protocol inside the unicast reservations(**section 8.5.2**).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the features taught in IEEE to the method disclosed by Peters in order to expand the functionalities of the wireless network.

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Regarding claim 37, the limitations in this claim are rejected based on the same reasons given to reject claim 9.

Regarding claim 38, the limitations in this claim are rejected based on the same reasons given to reject claim 8.

Regarding claim 41, Peters disclosed a method for host-device communication in a WUSB network including a host and at least one connected device, comprising the steps of:

the host using an EDCA mechanism to access the medium (**Fig. 14 accessing medium**);

the host polling the at least one connected device to request that the at least one connected device transmit data (**Fig. 14**); and

the host receiving data from the at least one connected device as a result of the poll (**Fig. 14**).

Peters fails to disclose host using an EDCA mechanism to access medium. IEEE teaches host using an EDCA mechanism to access medium (**Section 8.4.3.1 channel time allocation with priority and A1.2.1 QoS support**). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the mechanism taught in IEEE to the method disclosed by Peter in order to introduce priority in the data transmission process to improve the quality and efficiency of the wireless network.

Regarding claim 42, the limitations in this claim are rejected based on the same reasons given to reject claim 1.

Regarding claim 43, the limitations in this claim are rejected based on the same reasons given to reject claim 4.

Regarding claim 44, the limitations in this claim are rejected based on the same reasons given to reject claim 5.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Johannes Elg (US 2004/0047319) discloses a method and apparatus for contention-based medium access control for ad hoc wireless network.

Liang (US 2003/0083095) discloses a method of enhanced coexistence of collocated wireless networks.

Kondylis et al. (US 2003/0012176) discloses a method and apparatus for adaptive bandwidth reservation in wireless ad-hoc networks.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KATHY WANG-HURST whose telephone number is (571)270-5371. The examiner can normally be reached on Monday-Thursday, 7:30am-5pm, alternate Fridays, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benny Tieu can be reached on (571)272-7490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KATHY WANG-HURST/
Examiner, Art Unit 4173

/Lewis G. West/

Primary Examiner, Art Unit 2618